

## **Elicitation of a Cellular Immune Response in Patients with Non-Small Cell Lung Cancer by Immunogenic Tumor Cell Vaccination**

### **NON-TECHNICAL ABSTRACT**

Lung cancer presenting with advanced disease have a grim prognosis, with a survival of <5% two years later. There is laboratory and clinical evidence in animal systems indicating that under the right circumstances immune cells, called lymphocytes, can be stimulated to proliferate, recognize, and destroy cancer cells. In clinical studies in humans and in animals various measures can enhance the likelihood of a useful immune response. Among these maneuvers are supplying the cancer cell with the ability to produce a substance called B7.1, which facilitates an immune response and providing surface molecules (such as HLA-A1 or -A2) that are part of each individual's tissue type thereby potentially increasing the recognition of the cells. In this study, the genes that direct a cell to make B7.1 and HLA-A1 or -A2 are placed inside lung cancer cells obtained from a patient. These cells are known to grow reliably in the test tube. The genes will be inserted into these cells by means of a carrier to transport the gene, called a plasmid. The tumor cells, now carrying the genes for production of B7.1 and HLA A1 or A2 are radiated so that they are alive but cannot grow, are given by injections under the skin of the patient. The intent is to have these gene-carrying cancer cells stimulate sets of lymphocytes that are specifically geared to recognize the tumor cells and destroy them. By means of repeated injections of these gene-altered cells, it is hoped that adequate numbers of stimulated lymphocytes will circulate and cause the destruction of the remaining unaltered lung cancer cells in the patient's body. Toxicity is expected to be minimal because the immune reaction should not be severe. Patients will be carefully monitored for any adverse effects and to determine if laboratory or clinical evidence of response occurs.